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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)	
)	
Complaint of Discrimination)	Disabilities Issues Task Force
on the Basis of Handicap)	
Filed by the Cellular Phone)	
Taskforce on Feb. 2, 1997)	
)	
Guidelines for Evaluating the)	ET Docket No. 93-62
Environmental Effects of)	
Radiofrequency Radiation)	

100-29897

NOTICE AND COMMENTS

The attached pages of the new edition of Microwaving Our Planet were sent this day by Express Mail to Dr. Robert Cleveland at the Office of Engineering and Technology, 2000 M Street, N.W., Room 266, Washington, DC 20554, along with these Comments. The 1996 edition of Microwaving Our Planet is already in the record of ET Docket No. 93-62, having been submitted by the Cellular Phone Taskforce as an Exhibit along with its Petition for Reconsideration in said Docket on February 17, 1997, and also by the Ad-Hoc Association of Parties Concerned About the Federal Communications Commission's Radiofrequency Health and Safety Rules on July 9, 1997 as an Exhibit in Ex Parte Comments.

It will be noted that among the very most common symptoms reported to the Cellular Phone Taskforce by those living in proximity to cellular phone base stations, and in particular digital PCS base stations, is pain in the soles of the feet. It is also noted that footwear type makes a difference, and that these two facts are entirely consistent with all the

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discussion throughout Docket ET 93-62 about the problem of induced foot currents, even in relatively low exposure situations--a problem which the final rules in the docket failed to address only because adequate measuring equipment was said not to be readily available to the industry. See for example the comments of Maxwell Safety Products of 11/4/93, and the article sent by Dr. Om Gandhi on 11/1/93 on "Evaluation of Induced Foot-Currents in Humans Exposed to Radio-Frequency EM Fields." The Comments of Interstitial, Inc., submitted 11/10/93, also are to the point, and the article by Bridges et al., submitted as an Exhibit, discusses footwear (p. 259). Professor Hagmann's submission, submitted 1/10/94, discusses this in greater detail, and concludes that current maximum is actually in the thighs--also in good agreement with reports to the Cellular Phone Taskforce from well over a thousand individuals, nurses, doctors, and organizations to date as to the most painful areas of the body in the vicinity of microwave emitters such as PCS base stations. Please refer to the attached preface to Microwaving Our Planet, 1997 edition ("pain in the legs or the soles of the feet"). See also the comments of Hammett and Edison of 1/21/94, specifically the exhibit, "Remarks of Appellant William F. Hammett, Feb. 4, 1993", Exhibit 1, page 2, where it is noted that the type of footwear has a large influence on foot currents.

The Cellular Phone Taskforce respectfully notes that the experience of electrically sensitive people all over

this country is actually the opposite of what Dr. Gandhi, Hammett and Edison, Professor Hagmann, and indeed the ANSI/IEEE Standard theorize: we all find that when we are in proximity to a PCS base station, that wearing conducting soles such as leather, or going barefoot, is most comfortable, and that wearing rubber insulating soles causes pain in the soles of both feet, and in the thighs as well. I believe the mistake that is being made by the standard-setters is to consider the body only as a conductor and not as a capacitor, and that it is actually the buildup of charge on the soles of the feet in the presence of insulating shoes which is a much more severe problem than the conducting of current through the feet when a person is well-grounded. The buildup of static charge--which the designers of computer equipment and other electronics know all about because it plays havoc with electronic circuitry--in the person's body can be cumulative and enormous compared to the actual magnitude of the impinging microwave radiation. For the very sensitive, or the previously injured, it is a truly disabling problem. In much higher fields, such as occurs in occupational exposure to microwave radiation, the reverse may well be true: there static buildup may well reach some non-lethal limit, and the greater danger to be avoided may then be the grounding currents which the ANSI/IEEE Standard provides for. But neither phenomenon is trivial.

The Cellular Phone Taskforce respectfully points out to the Commission that the Environmental Protection Agency, the


Food and Drug Administration, and the National Institute for Occupational Safety and Health--three of the four health and safety agencies consulted by the Commission in its rulemaking process--all warned that the standard proposed for adoption by the Commission (and this is true of NCRP as well as ANSI/IEEE) is a thermal standard, and that there are credible reports in the scientific literature of a range of non-thermal effects of microwaves. In addition, the EPA was embarking on Phase 2 of its own standard-setting procedure, which was to focus specifically on non-thermal effects, effects of modulation, and chronic exposure effects, at the end of 1995, before the Congress of the United States suddenly withdrew funding for the project, named the FCC as the sole standard-setter in the Telecommunications Act on January 30, 1996, and gave the FCC power of preemption in this area over the States.

I suggest to the Commission that it must look very seriously at the allegation of three separate health and safety agencies of the United States that non-thermal effects must be taken into account, especially since the Commission is now in fact presented with a large number of citizens from virtually every state evidencing non-thermal injury. Here we are! The science is there, the health agencies are saying pay attention, and here we are, our civil rights are being denied, we are being discriminated against throughout society today simply because we are handicapped by being more sensitive to microwave radiation, and

because the chosen standard-setter, the Federal Communications Commission, has set standards which are injurious to us.

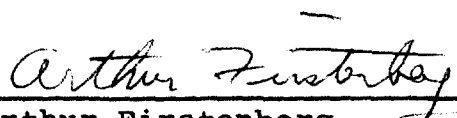
The Cellular Phone Taskforce repeats its request, made August 30, 1996 in its Petition for Reconsideration in ET Docket 93-62, that the Commission establish an immediate moratorium on new wireless facilities of all types within the United States of America. It is much more urgent now than it was then, because the tremendous proliferation of wireless technologies and facilities which has occurred in the last year and a half has left the electrically sensitive disabled population of this country with very few places to live. The Commission already has ample documentation for the fact that it is medically necessary for us to be exposed to zero microwave radiation. And we are no longer few in number.

Respectuflly submitted,


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December 27, 1997
Original + 4 copies

I declare under penalty of perjury that the foregoing is true and correct. Executed on December 27, 1997.


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December 27, 1997

Dr. Robert Cleveland
Office of Engineering and Technology
Federal Communications Commission
2000 M Street N.W., Room 266
Washington, DC 20554

Regarding: Appeal of the Cellular Phone Taskforce
Disabilities Issues Taskforce
ET Docket 93-62

Dear Dr. Cleveland:

Enclosed please find Notice and Comments, and attached new pages of Microwaving Our Planet, 1997 edition, in support of the Appeal of the Cellular Phone Taskforce's Complaint of Discrimination filed on February 2, 1997.

Sincerely,



Arthur Firstenberg
President



MICROWAVING OUR PLANET

*The Environmental Impact of
the Wireless Revolution*

Arthur Firstenberg

To Pelda, Fern and Ann

Published by the
Cellular Phone Taskforce
P.O. Box 100404
Vanderveer Station
Brooklyn, NY 11210

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2nd Edition

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PREFACE TO THE 1997 EDITION

The advent of 2 Ghz digital cellular phone service throughout large parts of the United States in November 1996 has unfortunately confirmed the evidence reviewed in this book most emphatically. Never before in history have millions of people been subjected to microwave radiation of this frequency and this magnitude for 24 hours a day, 365 days a year without respite.

The following syndrome is based on survey data reported to the Cellular Phone Taskforce during the past 6 months from thousands of people living within the new personal communications services (PCS) coverage areas: pressure behind the eyes, swollen throat, dry, puffy lips, headache, nausea, dizziness, sleeplessness, loss of appetite, pressure or pain in the chest, pain in the testicles or ovaries, pain in the legs or the soles of the feet, trembling, muscle spasms, irritability, forgetfulness, and sometimes fever, rash or nosebleeds. Dehydration and deteriorating vision are common. In some cases death from heart attack or brain hemorrhage has followed. Epidemics of bronchitis and sinusitis are being reported near all the new cellular towers, both digital and analog.

It is apparent that the general population is being affected, and not just those few we have previously called electrically sensitive (see Chapters 15 and 16).

This is an urgent plea to environmentalists and to those within the telecommunications industry, to doctors and businesspeople and government officials, that microwave radiation is an imminent danger to all of us more or less equally, and that for our common survival we must immediately halt the expansion of wireless communications upon this earth. There is no greater threat to our common future.

Arthur Firstenberg
June 22, 1997
Norwich, New York

INTRODUCTION

From Bill Gates' planned fleet of 300 satellites to the millions of ground based antennas being constructed throughout the world, our privacy is being invaded, our health undermined, our water polluted, endangered species threatened, the ozone layer destroyed, and our climate altered. The assault has already begun.

The purpose of this report is to give a general overview of the environmental threats associated with the wireless revolution, and an in-depth review of 70 years of research into the health hazards of microwaves.

The lack of an adequate review of the literature until now has led to the incorrect perception that the scientific evidence is contradictory and inconclusive. In fact the scientific evidence is consistent and overwhelming.

Satellite systems

In 1957 there were no artificial satellites in the sky above us. Today there are thousands. The list of countries that have launched satellites to date is huge: the United States, Canada, Mexico, Brazil, Argentina, France, Germany, Norway, Sweden, Spain, England, Russia, Turkey, China, Japan, Indonesia, India, Thailand, Korea, Malaysia, Australia, New Zealand, Tonga, the European Community, Eastern Europe, the Arab League, Pan-Asia, and Intelsat (125 nations). Multinational corporations are

16. Diagnosing ES: a guide for doctors

The clinical studies reviewed in this booklet report the following early signs of radiation injury:

- (1) change in olfactory sensitivity, which (if low) a single dose of caffeine may restore to normal
- (2) increased thyroid activity and/or enlargement of the thyroid gland
- (3) elevated serum protein and globulin, and lowered albumin/globulin ratio
- (4) elevated histamine in the blood
- (5) a weakened cutaneous vascular reaction to histamine
- (6) basophilic granularity of erythrocytes
- (7) decreased osmotic and acid resistance of erythrocytes
- (8) mild leukopenia and thrombocytopenia
- (9) immunoglobulins at the lower limit of normal
- (10) bradycardia and/or hypotension
- (11) lengthening of the intraauricular and intraventricular conduction of the heart on EKG, also a decrease in the amplitude of the R and T teeth, which may show up only upon physical stress
- (12) subclinical activity on the EEG; the appearance of pointed synchronized waves of high amplitude and increase in slow (delta and theta) waves. These changes may appear only after activation by hyperventilation.
- (13) on neurological exam: tremors of the eyelids and hands, increased tendon reflexes, decreased abdominal reflexes
- (14) abnormalities in the blood sugar curve, and slight increase in the fasting blood sugar
- (15) increase in cholesterol and beta-lipoprotein
- (16) increased or decreased serum lactic acid
- (17) acrocyanosis

Södergren (1996) in his forthcoming study is expected to report on specific changes in the urine, as well as in the red and white blood cells.

In view of the expected metabolic hypoxia (see below), changes in the blood oxygen content and pH might also be sought.

Low values for red blood cell copper have also been seen in electrically sensitive patients, in accord with the expected redistribution of metals in the body (see below).

Kowalski and Indulski (1990) discuss psychological tests which detect early disorders of the central and peripheral nervous systems from exposure to electromagnetic radiation.

The full set of clinical signs and symptoms is listed in the section on radiation sickness, above.

We now have in addition the reported experiences of large numbers of people who live near recently-erected digital cellular and PCS antennas. I have prepared the following list of signs and symptoms to aid physicians in diagnosing microwave radiation sickness among the general population. Some patients may have a great many of these findings; some only a few.

Physical exam

Look for:	skin rash enlargement or tenderness of the thyroid heart rate higher than usual blood pressure higher than usual shortness of breath (may "look like" an anxiety attack) wheezing lungs not clear increase in the limits of the heart liver tenderness abdominal tenderness general hypersensitivity of the skin any elevation of body temperature sinus pain/drainage deterioration of the teeth/pain in teeth with metallic fillings acrocyanosis
-----------	--

Neurological: tremors, especially of eyelids and hands
 change in visual acuity
 decreased sensitivity to odors
 decreased sensitivity to pinprick in the hands or feet
 increased sensitivity to vibration
 increased tendon reflexes of the upper or lower extremities
 decreased abdominal reflexes
 general muscle weakness
 anisocoria

Mental: agitation
 fatigue
 impaired short or long term memory
 paranoia (in advanced illness)

Patient history

Recent eye problems, especially pressure behind the eyes, but also floaters, difficulty focusing, deteriorating vision, eyeaches, etc.

Sudden dental problems, especially broken fillings

Dryness of the lips, mouth, skin, or eyes

Puffy lips

Swollen or sore throat

Sinusitis

Bronchitis

Headaches

Earaches

"Burning" in any part of the body: chest, eyes, ears, testicles, etc.

Pressure or pain in the chest

Insomnia

Dizziness

Nausea

Loss of appetite

Pelvic discomfort/pain in the testicles or ovaries

Paresthesias

Muscle spasms

Pain in the soles of the feet

Pain in the legs

Muscular, joint, or abdominal pain, especially pains that move around the body

"Electrical currents" in any part of the body

Sweating

Itchy systemic rash

Spontaneous nosebleeds

Frequent urination

Craving for carbohydrates

Laboratory tests

Abnormal blood sugar curve

Elevated blood histamine

Elevated serum protein and globulin

Lowered albumin/globulin ratio

Increase in cholesterol and beta-lipoprotein

Mild leukopenia or thrombocytopenia. Or any change in leucocytes (increase or decrease) or immunoglobulins, or IGG subclasses abnormal

Signs of autoimmunity

Altered serum lactic acid

Altered oxygen content or pH of the blood

Increased copper or zinc in the urine

Decreased red blood cell copper

Change in appearance of red blood cells (rouleaux formation, etc.)

Increased thyroid activity

Increased adrenal activity

EKG

Lengthening of the intraauricular and intraventricular conduction. Decrease in amplitude of the R and T teeth. Any arrhythmias.

EEG

Seizure activity. Abnormal excitation.

17. Mechanisms of injury

Shear-strain/closed head injury. Finally the issue of "thermal" vs. "non-thermal" effects must now be addressed, however reluctantly. The argument has been made by industry representatives that all health effects from microwaves are only due to the excessive heating of the body. These are the same scientists who never do any experiments at low levels of power because they don't expect to find any effects, and they are the same scientists who dismiss all the effects they do find at high levels of power as being due to heating. Since funding for research is largely controlled by these same scientists (see especially Frey 1982 for an excellent account of the situation), they are running a good scam. As can be seen from the review of studies in this report, however, there is nevertheless plenty of good, consistent evidence from more objective researchers that exposes once and for all the fiction these scientists are still trying to maintain.

Even if their conclusions were true, however, their reasoning escapes me. Does a health hazard cease to exist simply because it is labeled "thermal"? "Don't worry," they seem to be trying to tell us, "these microwaves are only cooking you after all!"

But let us look at the physics of the situation. Microwaves produce heat in food and in living organisms by vibrating ions and polar molecules such as water hundreds of millions of times per second. The molecules align themselves with the rapidly alternating electromagnetic field, and the friction from the vibrations produces heat. So that in actual fact microwaves

have primarily a direct electromagnetic interaction with our molecules. Heating is only a side effect.

However it is an important side effect, far more important than those scientists have admitted. Microwaves of extremely low intensity are known to cause thermoacoustic pressure waves in the head, including the brain, causing the phenomenon of microwave hearing (see above). This may cause a shear-strain injury in the brain, resulting in axonal tearing and neural degeneration, similar to what occurs in concussion from traumatic injury. Frey (1988) remarks on the similarity between the symptoms of radiation sickness/electrical sensitivity, and the symptoms of closed head injury or post-concussive syndrome: reduced attention span, impaired complex information processing, memory disturbance, increased emotional lability, irritability, anxiety, and depression. Reference to medical textbooks reveals other similarities, including headache, dizziness, photophobia, respiratory distress, bradycardia, change in blood pressure, cardiac arrhythmias, pupil asymmetry, altered glucose metabolism, and increased caloric demand, all of which have been noted in radiation sickness/electrical sensitivity. Frey comments, "It is ironic that it is such a shear-strain effect in the brain that the engineers concerned with hazards were implicitly assuming when they were trying to explain away the radiofrequency hearing effect as not being an indication of hazard. They never realized that shear-strain due to thermoacoustic expansion in brain tissue would itself damage the brain" (p. 800).

Similar damage, by the same mechanism, might also be responsible for effects on other organs. I am thinking particularly of the testes, which because of their location and size absorb much more microwave radiation than other organs (Copson 1962). Dr. John Holt, for example, speculates on the connection between electromagnetic radiation and the worldwide decline in human sperm count, as well as the recent global decline and extinction of so many species of amphibians (personal communication).